



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-1004; Project Identifier MCAI-2021-00480-E]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce Deutschland Ltd & Co KG (Type Certificate previously held by Rolls-Royce plc) Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for all Rolls-Royce Deutschland Ltd & Co KG (RRD) RB211 Trent 875-17, 877-17, 884-17, 884B-17, 892-17, 892B-17, and 895-17 model turbofan engines. This proposed AD was prompted by findings during engine overhaul of corrosion on the low-pressure compressor (LPC) front case assembly. This proposed AD would require inspection of the LPC front case assembly and, depending on the result of the inspection, accomplishment of the applicable corrective action(s), as specified in a European Union Aviation Safety Agency (EASA) AD, which is proposed for incorporation by reference (IBR). The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: (202) 493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For material that is proposed for IBR in this AD, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; phone: +49 221 8999 000; email: ADs@easa.europa.eu. For RRD service information identified in this NPRM, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, DE24 8BJ, United Kingdom; phone: +44 (0)1332 242424; fax: +44 (0)1332 249936; website: <https://www.rolls-royce.com/contact-us.aspx>. You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759. The EASA material is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-1004.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-1004; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the EASA AD, any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Nicholas Paine, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7116; email: nicholas.j.paine@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2021-1004; Project Identifier MCAI-2021-00480-E” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data.

The FAA will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Nicholas Paine, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803. Any commentary that the FAA receives that is not specifically designated as CBI will be placed in the public docket for this rulemaking

Background

EASA, which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2021-0114, dated April 23, 2021 (EASA AD 2021-0114), to correct an unsafe condition for certain RRD RB211 Trent 875-17, 877-17, 884-17, 884B-17, 892-17, 892B-17, and 895-17 model turbofan engines.

This proposed AD was prompted by findings during engine overhaul of corrosion on the LPC front case assembly caused by excessive movement between the Kevlar wrap and the fan case, which resulted in the anti-corrosion paint fretting away. The FAA is proposing this AD to address corrosion on the LPC front case assembly. This condition,

if not addressed, could affect the containment integrity of the LPC front case assembly during a fan blade release event, resulting in damage to the airplane, or reduced control of the airplane.

See EASA AD 2021-0114 for additional background information.

FAA's Determination

These engines have been approved by the aviation authority of another country and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with the State of Design Authority, the FAA has been notified about the unsafe condition described in the EASA AD referenced in this AD. The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Related Service Information under 1 CFR Part 51

The FAA reviewed EASA AD 2021-0114. EASA AD 2021-0114 specifies actions for inspecting the LPC front case assembly and, depending on the result of the inspection, corrective action. This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

Other Related Service Information

The FAA reviewed Rolls-Royce RB211 Trent 800 Series Propulsion Systems Alert Non-Modification Service Bulletin RB.211-72-AG774, Revision 4, dated October 13, 2020 (the NMSB). The NMSB specifies procedures for inspecting the LPC front case assembly for corrosion and taking corrective action.

Proposed AD Requirements in this NPRM

This proposed AD would require accomplishing the actions specified in EASA AD 2021-0114, described previously, as incorporated by reference, except for any differences identified as exceptions in the regulatory text of this proposed AD and except as discussed under "Differences Between this Proposed AD and the EASA AD."

Explanation of Required Compliance Information

In the FAA's ongoing efforts to improve the efficiency of the AD process, the FAA initially worked with Airbus and EASA to develop a process to use certain EASA

ADs as the primary source of information for compliance with requirements for corresponding FAA ADs. The FAA has since coordinated with other manufacturers and civil aviation authorities (CAAs) to use this process. As a result, the FAA proposes to incorporate EASA AD 2021-0114 in the FAA final rule. This proposed AD would require compliance with EASA AD 2021-0114 in its entirety through that incorporation, except for any differences identified as exceptions in the regulatory text of this proposed AD. Using common terms that are the same as the heading of a particular section in EASA AD 2021-0114 does not mean that operators need comply only with that section. For example, where the AD requirement refers to “all required actions and compliance times,” compliance with this AD requirement is not limited to the section titled “Required Action(s) and Compliance Time(s)” in EASA AD 2021-0114. Service information specified by EASA AD 2021-0114 that is required for compliance with it will be available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-1004 after the FAA final rule is published.

Differences Between this Proposed AD and the EASA AD

Qualified Shop Visit

EASA AD 2021-0114 defines a qualified shop visit as any scheduled shop visit where the affected part is exposed and substantial rebuild has not yet started, except shop visits for serviceability only. This proposed AD defines a qualified shop visit as the induction of an engine into the shop after the effective date of this AD for maintenance involving the separation of pairs of major mating engine flanges, with the exception of the separation of engine flanges solely for the purposes of transportation of the engine without subsequent engine maintenance.

Effective Date

Where EASA AD 2021–0114 requires compliance from its effective date, this proposed AD would require using the effective date of this AD.

Compliance

Where the service information referred to in EASA AD 2021-0114 specifies to inspect the affected part and contact the manufacturer for repair instructions if any corrosion is found exceeding the criteria as specified in the NMSB, this AD requires the

removal of the affected LPC front case assembly from service if corrosion is found that exceeds the criteria specified in Appendix 2 of the NMSB.

Remarks

This AD does not mandate compliance with the “Remarks” section of EASA AD 2020-0114.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 98 engines installed on airplanes of U.S. Registry.

The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Perform ultrasonic inspection	8 work-hours x \$85 per hour = \$680	\$0	\$680	\$66,640
Rework the LPC front case assembly	200 work-hours x \$85 per hour = \$17,000	\$18,724	\$35,724	\$3,500,952

The FAA estimates the following costs to do any necessary replacements that would be required based on the results of the proposed inspection. The FAA has no way of determining the number of aircraft that might need these replacements:

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Replace the LPC front case assembly	140 work-hours x \$85 per hour = \$11,900	\$932,000	\$943,900

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency’s authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress

charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

Rolls-Royce Deutschland Ltd & Co KG (Type Certificate previously held by Rolls-Royce plc): Docket No. FAA-2021-1004; Project Identifier MCAI-2021-00480-E.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Rolls-Royce Deutschland Ltd & Co KG (RRD) (Type Certificate previously held by Rolls-Royce plc) RB211 Trent 875-17, RB211 Trent 877-17, RB211 Trent 884-17, RB211 Trent 884B-17, RB211 Trent 892-17, RB211 Trent 892B-17, and RB211 Trent 895-17 model turbofan engines, as identified in EASA AD 2021-0114, dated April 23, 2021 (EASA AD 2021-0114).

(d) Subject

Joint Aircraft System Component (JASC) Code 7230, Turbine Engine Compressor Section.

(e) Unsafe Condition

This AD was prompted by findings during engine overhaul of corrosion on the low-pressure compressor (LPC) front case assembly caused by excessive movement between the Kevlar wrap and the fan case, which resulted in the anti-corrosion paint fretting away. The FAA is issuing this AD to address corrosion on the LPC front case assembly. The unsafe condition, if not addressed, could result in reduced integrity of the LPC front case assembly during a fan blade release, resulting in damage to the airplane or reduced control of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

Except as specified in paragraph (h) of this AD: Perform all required actions

within the compliance times specified in, and in accordance with, EASA AD 2021-0114.

(h) Exceptions to EASA AD 2021-0114

(1) Where EASA AD 2021-0114 requires compliance from its effective date, this proposed AD would require using the effective date of this AD.

(2) Where EASA AD 2021-0114 defines a qualified shop visit as any scheduled shop visit where the affected part is exposed and substantial rebuild has not yet started, this AD defines a qualified shop visit as the induction of an engine into the shop after the effective date of this AD for maintenance involving the separation of pairs of major mating engine flanges, with the exception of the separation of engine flanges solely for the purposes of transportation of the engine without subsequent engine maintenance, which does not constitute an engine shop visit.

(3) Where the service information referred to in EASA AD 2021-0114 specifies to contact the manufacturer for repair instructions if any corrosion is found exceeding the criteria as specified in the NMSB, this AD requires the removal of the affected LPC front case assembly from service if corrosion is found that exceeds the criteria specified in Appendix 2 of the NMSB.

(4) This AD does not mandate compliance with the “Remarks” section of EASA AD 2021-0114.

(i) No Reporting Requirement

Although the service information referenced in EASA AD 2021-0114 specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ECO Branch, send it to the attention of the person identified in paragraph (k)(2) of this AD. Information may be emailed to: ANE-AD-AMOC @faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Related Information

(1) For more information about EASA AD 2021-0114, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; phone: +49 221 8999 000; email: ADs@easa.europa.eu. You may find this material on the EASA website at <https://ad.easa.europa.eu>. You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759. This material may be found in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-1004.

(2) For more information about this AD, contact Nicholas Paine, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7116; email: nicholas.j.paine@faa.gov.

(3) For RRD service information identified in this AD, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, DE24 8BJ, United Kingdom; phone: +44 (0)1332 242424; fax: +44 (0)1332 249936; website: <https://www.rolls-royce.com/contact-us.aspx>. You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759.

Issued on November 9, 2021.

Ross Landes, Deputy Director for Regulatory Operations,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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